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Petra Yun

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EXAMINER

PATEL, RONAK C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/539,784 | Applicant(s) YUN ET AL. | |
| | Examiner RONAK PATEL | Art Unit 1787 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/08/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12,14-29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14-29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29 depends on cancelled claim 13. Correction is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 2, 5, 7, 8, 14, 15, 19, 20, 23, 31, 32, are rejected under 35 U.S.C. 102(e) as being anticipated by Tachino et al. (US 2006/0057318).
5. Regarding claims 1, 2, 7, 8, 13, 14, 15, 19, 20, 31, 32 Tachino discloses a multilayer structure constructed of two or more layers including a potassium ionomer layer (X) and a layer (Y) comprising a polymer material like LLDPE (abstract). Layer (X) comprises a potassium ionomer of ethylene unsaturated carboxylic acid copolymer (claim 4). Tachino also discloses mixed ionomers preferably 70% or more neutralization by potassium ion, where the ion is monovalent and belongs to the alkali metal groups,

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of the ethenically unsaturated carboxylic acid copolymers that has carboxylic acid content of 10 to 20% by weight and an average melt flow rate of 1 to 300 g/10min as determined at a temperature of 190 C and under a load of 2160g (para 0014), Tachino also discloses the ethylene polymer used in the (Y) layer, second layer of the present application has melt index of 0.1 to 100 g/10min at a temperature of 190C and under a load of 2160 g (para 0027), which clearly indicates that the ethylene based polymer melt index is not substantially lower than that of the copolymer containing first layer. Tachino also discloses that the layer X can be blended with another thermoplastic polymer to an extent that the antistatic properties, slip characteristics and scratch resistance are not impaired and such polymers can be ethylene based polymers (para 0017) Tachino also discloses that the multilayer structure can be manufactured by extrusion coating process, co-extrusion process (para 0033) and discloses in table 6 for example 13 where the thickness of the potassium ionomer of ethylene unsaturated carboxylic acid copolymer layer is 50 micrometer. Tachino also discloses that the ethylene copolymer manufactured in the presence of metallocene catalyst employed as a polymer material of the surface layer (Y) (para 0025) which have varied density values in accordance with the alpha olefin content of the copolymer and it is preferable to employ one that has a melt flow rate of 0.1 to 100 g/10min as determined at the temperature of 190 C and under the load of 2160g (para 0027). Tachino discloses an embodiment of a three layer structure comprising an outer layer Y, the intermediate layer X, which is the film layer of present application, and the inner layer (Z) (para 0032) also discloses that the multilayer structure can be provided with an adhesive layer on one side or both side of its surface

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layer (para 0073), which clearly suggests that the adhesive layer can be on side of the inner layer or surface layer, which makes four layer structure as YXZA, A indicates an adhesive layer, X as an first layer and Z as an primer layer which is between film layer and adhesive layer and multilayer structure can be utilized for the present application in addition to the packaging material use such as semiconductor-use adhesive tape (para 0072), as Tachino does not mention the use of halogen in its entire application, the multilayer structure for the adhesive tape would be halogen free. As Tachino discloses a multilayer structure constructed of two or more layers including a potassium ionomer layer (X), Layer (X) comprises a potassium ionomer of ethylene unsaturated carboxylic acid copolymer (claim 4) and also multilayer structure is used in the manufacture of tapes, it therefore would be inherent that the it tape would be easy tear winding tape.

6. Although Tachino does not disclose that the film is blown film extruded film layer, i.e. produced by blow film extrusion it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) . Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

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7. Therefore, absent evidence of criticality regarding the presently claimed process and given that Tachino meets the requirements of the claimed product, Tachino clearly meet the requirements of present claims.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 29 is rejected under 35 U.S.C. 103 (a) as being unpatentable by Tachino et al. (US 2006/0057318)

10. Regarding claim 29, Tachino discloses mixed ionomers preferably 70% or more neutralization by potassium ion, where the ion is monovalent and belongs to the alkali metal groups of the ethenically unsaturated carboxylic acid copolymers that has carboxylic acid content of 10 to 20% by weight and an average melt flow rate of 1 to 300 g/10min as determined at a temperature of 190 C and under a load of 2160g (para 0014), while the present claims require that the melt flow index is below 1 g/10min.

11. It is apparent, however, that the instantly claimed melt flow index and that taught by Tachino are so close to each other that the fact pattern is similar to the one in In re Woodruff , 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the

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claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

12. In light of the case law cited above and given that there is only a “slight” difference between the Melt flow index disclosed by Tachino and the melt flow index disclosed in the present claims, it therefore would have been obvious to one of ordinary skill in the art that the melt flow index disclosed in the present claims is but an obvious variant of the melt flow index disclosed in Tachino, and thereby one of ordinary skill in the art would have arrived at the claimed invention.

13. Claims 3, 22 and 25 are rejected under 35 U.S.C. 103 (a) as being unpatentable by Tachino et al. (US 2006/0057318) in view of Vogel et al. (US 2002/0055006)

14. Regarding claims 3, 22 and 25 Tachino fails to disclose that the fraction of copolymer is at least 50% by weight. However, Vogel discloses a multilayer, coextruded ionomeric thermoplastic sheet and film (para 0003) and discloses that the ionomer composition consists of a copolymer derived from ethylene and alpha olefin unsaturated carboxylic acid wherein the copolymer is neutralized with metal ions and the ionomer is present in the range from 60 to 40 weight percent (para 0031). The monolayer sheets are preferably about 1 to 50 mils thick (para 0088), 1 mils = 25.4 micrometer, which meets the claim limitation of claim 25 and also discloses an ionomer monolayer which can be clear or pigmented (para 0091). The motivation of using the resin composition in a fraction of 60 to 40 % by weight and film layer thickness in the range of 1 to 50 mils

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thickness is to have composition to enhanced mar resistance and have clear and low haze levels and outstanding melt strength (para 0139 and 0140)

15. In light of the motivation of using the resin composition of ionomer with ethylene unsaturated carboxylic acid in 40-60 % by weight and in the thickness of range 1 to 50 mils as taught by Vogel as described above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use the resin composition in 50 wt% as taught by Vogel in the film layer of Tachino motivated by the desire to form a composition to enhanced mar resistance and have clear and low haze levels and outstanding melt strength (para 0139 and 0140)

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Riedel (US 5679190).

17. Regarding claim 6, Tachino fails to mention that the tensile strength by the method of Elmendorf in the machine direction is at least twice the tensile strength in the cross direction. However, Riedel mentions the pressure sensitive adhesive tape having the tensile strength in the machine direction is at least twice the tensile strength in the cross direction (Table 2; col 15, line 28). Riedel mentions the ratio of the tensile strength in the MD:CD is more than two in the PSA tape would have good tearable characteristics (Table 2).

18. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the multilayer structure for adhesive tape of Tachino to prepare the multilayer winding film that is hand tearable by having a ratio of tensile strength in the machine direction to be at least twice the tensile strength in the cross direction of Riedel

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by using the process conditions known in the art motivated by the desire to improve the tear properties of the film.

19. Claims 10-11 are rejected under 35 U.S.C. 103 (a) as being unpatentable by Tachino et al. (US 2006/0057318) in view of Mientus (WO 99/64239).

20. Regarding claim 10, Tachino fails to disclose the multilayer film comprises the pressure sensitive adhesive which is polyacrylates based. However, Mientus teaches the pressure -sensitive adhesive can be any including rubber based adhesive, acrylic adhesive, vinyl ether adhesive and silicone adhesives (page 23, line 35, page 24, line 1).

21. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the multilayer structure of Tachino with the pressure sensitive adhesive that is polyacrylates of Mientus motivated by the desire to have excellent adhesive properties that would adhere the adhesive layer to the film layer.

22. Regarding claim 11, Tachino fails to disclose that the multilayer film of the winding tape is black. However, Mientus discloses that the multilayer film can be pigmented with different colors such as white, black, yellow, blue and red (page 41, lines 15-20). The motivation for pigmenting the adhesive tape with different colors such as black is to provide desired color to the tape.

23. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the multilayer structure of Tachino with the pigmented colors of Mientus in the multilayer film motivated by the desire to provide desired color to the tape.

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24. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Mamish et al. (US 6355344)

25. Regarding claim 12, Tachino fails to disclose that the winding film is plasticizer-free or the plasticizer content is sufficiently low to produce a fogging number above 90%. However, Mamish discloses pressure sensitive adhesive film material has a plastic film and a PSA layer (abstract) and discloses that the additives used in the plastic film contributes no halogenated polymers and no plasticizers to the plastic film (col. 6, lines 32-40). The motivation for adding the additives that has no halogenated polymers and no plasticizers to the film is for recyclability and low-fogging (col. 6, lines 32-40).

26. In light of the motivation of having the PSA adhesive film to be plasticizer-free and non halogenated as taught by Mamish above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to not make the multilayer structure used to make adhesive tape of Tachino to be plasticizer free as taught by Mamish to form the multilayer adhesive tape to have low-fogging.

27. Claims 16 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Tanaka (EP 333294)

28. Regarding claim 16 and 33, Tachino fails to disclose that the layer of the winding tape is crosslinked by ionizing radiation. However, Tanaka discloses multilayered crosslinked ethylenic resin films comprising a laminate of atleast two ethylenic layers crosslinked by irradiation with ionizing radiation (abstract). The motivation for

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crosslinking the layer with ionizing radiation is to improve the tear strength of the resin film (page 3, lines 6-9)

29. In light of the motivation of crosslinking the film by ionizing radiation as taught by Tanaka above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to crosslink the layer of Tachino by ionizing radiation as taught by Tanaka to form an adhesive tape with improved tear strength.

30. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Chen (US 2007/0207332)

31. Regarding claim 21, Tachino fails to disclose that the metal ions are selected from the alkali metal group such as sodium, However, Chen discloses an organic salt modified potassium ionomeric copolymers (abstract) and ionomeric resins are ionic copolymers of an olefin such as ethylene with a metal salt of an unsaturated carboxylic acid, and one alkali metal such as sodium, potassium, magnesium or combination of such cations is used to neutralize some portion of the acidic group in the copolymer (para 0013) and also discloses carboxylic acid can be neutralized by mixed ions such as potassium and sodium (para 0029). The motivation for using the alkali metals such as sodium to neutralize ethylenically unsaturated carboxylic acid copolymer is to produce films that have excellent gas absorption and transmission and antifouling properties (abstract).

32. In light of the motivation of using the alkali metal such as sodium to neutralize the copolymer as taught by Chen as disclosed above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to neutralize the copolymer with

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sodium as taught by Chen in multilayer structure of Tachino to produce multilayer film for adhesive that have excellent gas absorption and transmission and antifouling properties.

33. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Sumida (US 5405565).

34. Regarding claim 24, Tachino fails to mention that the tensile strength by the method of Elmendorf in the machine direction is at least four times the tensile strength in the cross direction. However, Sumida mentions the multilayer film having the tensile strength in the machine direction is at least four times the tensile strength in the cross direction (col 21, lines 60-68). Sumida teaches the multilayer film with the tensile strength in the machine direction at least four times the tensile strength in the cross direction would improve the strength of the film and would make it less susceptible to tear (col 22, lines 22-26).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the winding tape of the multilayer film with an adhesive layer of Tachino to prepare the multilayer film that is hand tearable by having a ratio of tensile strength in the machine direction to be at least four times the tensile strength in the cross direction of Sumida by using the process conditions and test methods known in the art motivated by the desire to improve the tear properties and strength of the film and make the film less susceptible to tear

36. Claims 9 and 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino et al. (US 2006/0057318) in view of Varela de la Rosa et al. (US 6927267)

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37. Regarding claims 9 and 28, Tachino fails to disclose that the adhesive is pressure sensitive dispersion adhesive. However, Rosa discloses a pressure sensitive adhesive (PSA) (abstract) and also discloses an aqueous dispersion comprising the PSA polymer (claim 31). PSA can be solvent-free natural or synthetic resin having a viscoelasticity termed tack (col. 1, lines 14-16). The motivation for using solvent-free pressure sensitive dispersion adhesive in tape application is to exhibit improved cohesion coupled with essentially unchanged adhesion and tackiness (col. 12, lines 4-6) and also they can stick to variety of substrates and makes it simple to use and make it possible to work rapidly when bonding (col. 1, lines 20-28)

38. In light of the motivation of using the pressure sensitive dispersion adhesive in the tape application as taught by Varela de la Rosa as taught above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use solvent free pressure sensitive dispersion adhesive in the adhesive layer of Tachino to exhibit improved cohesion coupled with essentially unchanged adhesion and tackiness (col. 12, lines 4-6) and also they can stick to variety of substrates and makes it simple to use and make it possible to work rapidly when bonding (col. 1, lines 20-28).

39. As to claim 26 and 27, which depends on claim 8, since the feature, "amount of an adhesive layer is 18 to 28 g/m² and the unwind force at an unwind speed of 300 mm/min is 1.6 to 4.0 N/cm or the holding power is more than 150 min." set forth in claim 1 and further limited by claim 26 and 27, is optional. Since this feature may be absent, the claimed limitation is taught when the feature is absent. The limitation where there is

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a primer layer between film layer and adhesive layer has already been addressed above in claim 8.

Response to Arguments

40. In light of Applicant's filing a proper terminal disclaimer on 07/08/2010, the double patenting rejection of record is overcome.

41. Applicant's arguments filed 07/08/2010 have been fully considered but they are not persuasive. Applicant argues that production of the film by blown film extrusion leads to a film whose properties are structurally different from films that are produced by other methods and blown film produces a film that can be torn down very easily in the transverse direction and crack continues in the transverse direction is very clean.

However, it is noted that "the arguments of counsel cannot take the place of evidence in the record", *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner's position that the arguments provided by the applicant regarding the winding tape composed of a blown film extruded film layer must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), "the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001". It should be noted that Tachino does disclose that the multilayer structure can be manufactured by the extrusion coating process, coextrusion process or the blow molding process (para 0033). Applicant in his arguments has compared the casting process with the blown film extrusion process and not with process of Tachino.

Specifically, in order to establish that the presently claimed process produces a different

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product, applicant point to examples 1-2 in the present specification wherein example 1 uses a casting process and example 2 uses the claimed blown film extrusion process. Applicant argues that the products of the examples are different. However, this data is not persuasive in overcoming the rejection of record given that the data does not compare with the closest applied prior art Tachino which does not use a casting process but rather an extrusion coating process, co extrusion process or blow molding process. There is no evidence that a film produced by the process of Tachino would result in a different product than that presently claimed or would not possess the same properties as the presently claimed blown film extruded film layer.

42. Applicant argues that Tachino has absolutely no information about the production of films. However, it should be noted that Tachino does disclose that the multilayer structure can be manufactured by the extrusion coating process, coextrusion process or the blow molding process (para 0033).

Conclusion

43. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

44. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONAK PATEL whose telephone number is (571)270-1142. The examiner can normally be reached on Monday to Thursday 8 AM EST to 6PM EST.

45. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

46. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. P./
Examiner, Art Unit 1787
08/27/2010

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1787

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